CIVIL AIR PATROL
California Wing Headquarters
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CAP REGULATION 100-1, V1
CAWG Supplement 1
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Communications-Electronics

OPERATIONS AND TRAINING PLAN

1. Purpose. This plan, used in conjunction with CAPR 100-1V1 (dated 1 August 1996), CAPR 100-1V3 (dated 21 August 2000) CAPP 214, NTIA Manual of Regulations and Procedures for Federal Frequency Management (Edition 9/95, with revisions for September 1996 and January and May 1997. CAP Communications Network Plan, Communications Strategic Plan, CAP Communications Directory and Emergency Communications Plan, provides a plan for an organized, efficient, and reliable network run by highly trained communicators. This network will handle the Operations and Training traffic necessary to support the missions of California Wing, Civil Air Patrol.

2. Scope. This Operations and Training Plan with attachments pertains to the establishment of radio communications for all units, to be used on a daily basis for unit operational and training activities. Attachments include: Attachment 1, Emergency Communications Plan; Attachment 2, Repeater Plan; Attachment 3, Net Protocol; and Attachment 4, Narrowband Plan.

3. Network Organization. Radio networks will be maintained and composed as follows:

A. Morning HF Net
   1. Wing NCS
   2. Senior Wing Relay Stations
   3. Relay Stations

B. Wing Net
   1. Wing NCS
   2. Wing Alternate NCS (ANCS)
   3. Wing Headquarters Stations
   4. All Group NCS's
   5. All Group ANCS's
   6. All Unit Stations

C. Group Net
   1. Group NCS
   2. Group ANCS
   3. All Group Headquarters Stations
   4. All Squadron Stations

D. Squadron Net
   1. Squadron NCS
   2. Squadron Stations

4. Plan Requirements. As per Chapter 2 CAPR 100-1, each group and squadron must publish and maintain an Operational and Training Plan based on the requirements of this plan. All plans must support the plan of next higher headquarters. Upon completion, forward Squadron plans to Group. Forward Group and Detached Squadron consolidated plans to this Headquarters, Attn: DC, to arrive not later than 31 March.

5. Network Functions. THE EVENING HF NET IS THE PRIMARY CALIFORNIA WING RADIO NET. ALL GROUP AND DETACHED SQUADRONS ARE REQUIRED TO CHECK INTO THIS NET. Stations with Packet or e-mail capability shall acknowledge receipt of radio traffic transmitted and received by electronic means to the NCS. Our radio nets provide a communications capability to all units of California Wing. Daily use of the system supports the normal operations of the Wing and its subordinate units, as well as providing a means for communications training and testing.

6. Nets – General. All California Wing nets, including those conducted by Groups and Squadrons, for both operational and training purposes, will be conducted in accordance with the following instructions:

A. Authority and Reference for Operations. CAPR 100-1.

B. Net Operations. All nets within California Wing will be conducted as directed nets.

C. Net Activation. On notice and three times weekly in accordance with the established schedule included as Attachment 3 of this plan.

7. Group Nets. All Group Nets must be approved by Headquarters California Wing/DCO. Groups are encouraged to hold their own local net on VHF-FM. Group Nets should be held weekly, preferably on the night the Group Staff is meeting. Where the use of VHF-FM is not practical, requests for HF net time must be routed to this headquarters, Attn: DC for coordination.

8. Net Control Stations. All Net Control Stations and Wing Relay Stations will maintain capability on HF frequencies 4585.0 kHz and 4582.0 kHz upper side band. All Control and Relay Stations must also be able to operate 143.75 MHz, 143.9 MHz, 148.125 MHz, 148.1375 MHz, 148.15 MHz, 149.5375 MHz. Also recommended is 26.620 MHz and the former AF Liaison frequencies which have been authorized for CAP use. All stations should have auxiliary power available (see paragraph 12 of this Communications Plan). It is desirable that all fixed stations attain this level of capacity.

9. Preparation of Net Schedules. All net schedules will be referred to in Zulu time, i.e. Universal Coordinated Time, formerly Greenwich Mean Time. Remember that in some cases the Zulu day is one day ahead of the calendar day. See the communications directory for the current nationwide HF net schedules. Please do not interfere with another Wing's net time. Refer to Attachment 3 of this plan for California Wing's HF net schedules.

10. Emergency Operations. Priority for the use of any CAP frequency will be given in all instances to support an operational mission. This does not mean exclusive use. Other communications activities may still continue, but priority will be given when needed to the operations mission requirement. Emergency operations may preempt previously scheduled net operations. Emphasis will be placed on portable and mobile capability to provide communications necessary to support any operational mission. Refer to Attachment 1 of this plan for the Emergency Communications Plan. **THE WING NCS, ALTERNATE NCS, OR DIRECTOR OF COMMUNICATIONS MAY DECLARE A DIRECTED NET AT ANY TIME, ON ANY FREQUENCY, IN FURTHERANCE OF TRANSMISSION OF EMERGENCY TRAFFIC, OR FOR THE GOOD OF THE ORDER AND RADIO DISCIPLINE.**

11. Frequency Utilization. THE PRIMARY MEANS OF PASSING INTRAWING TRAFFIC IS THE EVENING HF NET. The establishment and use of VHF-FM repeaters is encouraged, thus assisting in operational and local area traffic.

12. Auxiliary Power Requirements. All land stations should maintain an auxiliary power source. An auxiliary power source is

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defined and understood to be a non-commercial power source which provides the station the capability to maintain continuous operation for an extended (72 hours) period of time. This source, may be a gasoline (or other fossil fuel) generator, or a battery operated with the battery source being re-charged by commercial power (i.e. solar or fossil fuel generator). Each NCS will conduct one 30-minute net per month where all stations are using an auxiliary power source. The net may be conducted on either VHF or HF, with preference on the HF net. The Wing net run in this manner shall be conducted on the third Monday of each month, local time. Voice announcements and appropriate entries in the station log shall indicate such operation.

13. Backup Equipment. All stations should endeavor to procure and maintain backup equipment. This could include portable and mobile equipment. Backup equipment should be available and ready for immediate use.

14. Frequencies and Emissions Authorized. These are AF frequencies assigned to CAP, and are administered by the Air Force Communications Command through National Headquarters/DOK. The following frequencies are authorized for use by California Wing:

K2371 Voice USB (3K00J3E) Packet (200H00F1B)

K2374 Voice USB (3K00J3E) Packet (200H00F1B)

K4582 Voice USB (3K00J3E) Packet (200H00F1B) S[1]

K4585 Voice USB (3K00J3E) Packet (200H00F1B) P[2]

K7341 Packet (200H00F1B)

K7635 Voice USB (3K00J3E) Packet (200H00F1B)

K7920 Voice USB (3K00J3E) Packet (200H00F1B)

K14902 Voice USB (3K00J3E) Packet (200H00F1B)

K18205 Voice USB (3K00J3E) Packet (200H00F1B)

K20873 Voice USB (3K00J3E) Packet (200H00F1B)

K26617 Voice USB (3K00J3E) Packet (200H00F1B)

K26620 Voice AM (3K00A3E) Packet (200H00F1B)

M121.600 No longer authorized

M121.775 Practice Beacon (6K00A3N)

M123.100 Voice AM (6K00A3E)

M Voice AM (6K00A3E)[3]

M Voice AM (6K00A3E)[4]

M143.750 Voice FM (16K00F3E, 11K00F3E)

M143.900 Voice FM (16K00F3E, 11K00F3E)

M148.125 Voice FM (16K00F3E, 11K00F3E)

M148.1375 Voice FM (16K00F3E, 11K00F3E)

M148.150 Voice FM (16K00F3E, 11K00F3E)

M149.5375 Voice FM (16K00F3E, 11K00F3E)

M149.895 Packet (10K00F2D)

[1] Secondary HF frequency

[2] Primary HF frequency

[3] AirInc contract frequency within 100 miles of Mt. Diablo tactical call signs must be used. No exceptions!

[4] AirInc contract frequency within 100 miles of Santiago Pk tactical call signs must be used. No exceptions!

Frequencies and Emission Authorized (Continued)

M149.925 No longer authorized

15. Repeater Locations. See Repeater Plan Attachment 2.

16. Communications Security. CAP repeaters are used for our normal administrative and operational traffic. Due to the advances in electronics over the past few years, it is fairly simple for a non-member to gain access to our repeater system. In order to minimize the possibility of accidental or intentional interference, DO NOT MAKE ANY ANNOUNCEMENT OF A REPEATER'S TONE ACCESS FREQUENCY DURING NET ROLL CALLS OR AT ANY OTHER TIME. Transient stations can access an area's primary repeaters on 100 Hz. Should other information on repeater access be required, the area NCS can pass it on by telephone. Intentional interference should be reported to this Headquarters, Attn: DC, by telephone or on a frequency other than the one being interfered with.

17. Repeater Access Tones. The following system shall be used to identify repeater access tones:

EIA SUBAUDIBLE TONES

Tone 1	**67.0Hz**	**Tone 14**	**110.9Hz**	**Tone 27**	**173.8Hz**
Tone 2	**71.9Hz**	**Tone 15**	**114.8Hz**	**Tone 28**	**179.9Hz**
Tone 3	**74.4Hz**	**Tone 16**	**118.8Hz**	**Tone 29**	**186.2Hz**
Tone 4	**77.0Hz**	**Tone 17**	**123.0Hz**	**Tone 30**	**192.8Hz**
Tone 5	**79.7Hz**	**Tone 18**	**127.3Hz**	**Tone 31**	**203.5Hz**
Tone 6	**82.5Hz**	**Tone 19**	**131.8Hz**	**Tone 32**	**210.7Hz**
Tone 7	**85.4Hz**	**Tone 20**	**136.5Hz**	**Tone 33**	**218.1Hz**
Tone 8	**88.5Hz**	**Tone 21**	**141.3Hz**	**Tone 34**	**225.7Hz**
Tone 9	**91.5Hz**	**Tone 22**	**146.2Hz**	**Tone 35**	**233.6Hz**
Tone 10	**94.8Hz**	**Tone 23**	**151.4Hz**	**Tone 36**	**241.8Hz**
Tone 11	**100Hz**	**Tone 24**	**156.7Hz**	**Tone 37**	**250.3Hz**
Tone 12	**103.5Hz**	**Tone 25**	**162.2Hz**		
Tone 13	**107.2Hz**	**Tone 26**	**167.9Hz**		

FIGURE 1-1

18. Wing Monitoring Stations. Certain stations with the Wing have been assigned as Wing Monitoring Stations. These stations have the function of noting and advising stations of technical and operational violations. These stations have facilities for measuring frequency, modulation, deviation, and have the authority to impose radio silence on any CAP radio station operating in violation of operational or technical requirements. Wing Monitoring Officers are announced in Wing Headquarters Personnel Authorizations.

19. Radio Checks, Signal Strength, and Readability.

A. A station is understood to have good signal strength and readability unless otherwise notified. Strength of signals and readability will not be exchanged unless one station cannot hear another station.

B. A station that wishes to inform another station of his signal strength and readability will do so by means of a short and concise report of actual reception such as "Weak but readable", "Loud but distorted", "Weak with interference", etc. Reports such as "five by five", "four by four", etc. will not be used to indicate strength and quality of reception.

C. The pro-words listed below are for use when initiating and answering queries concerning signal strength and readability:

1. General:

RADIO CHECK	What is my signal strength and readability; how do you hear me?
ROGER	I have received your last transmission satisfactorily. The omission of comment or signal strength and readability is understood to mean that reception is loud and clear. If reception is other than loud and clear, it must be described with the prowords from (2) and (3) below.
NOTHING HEARD	To be used when no reply is received from a called station.

2. Report of Signal Strength:

LOUD	Your signal is very strong.
GOOD	Your signal strength is good.
WEAK	Your signal strength is weak.
VERY WEAK	Your signal is very weak.
FADING	At times your signal strength fades to such an extent that continuous reception cannot be relied upon.

3. Report of Readability:

CLEAR	The quality of your transmission is excellent.
READABLE	The quality of your transmission is satisfactory.
UNREADABLE	The quality of your transmission is so bad that I cannot read you.
DISTORTED	The quality of your transmission is so bad that I cannot read you.
WITH INTERFERENCE	Having trouble reading you because of interference.
INTERMITTENT	Having trouble reading you because your signal is intermittent.

20. Functional Address Symbols. All communicators are to use the standard Functional Address Symbols (FAS) in all traffic transmitted: voice, and packet. This is in compliance with CAPR 10-1, Atch 6, and CAWGM 11-1, Figure 1-7. FAS are to be used as a method to minimize the amount of traffic transmitted. In some cases, such as at a mission base where several members may share the same FAS, then the members name may be inserted after the FAS to avoid confusion. Under no circumstances can this be used when only one member is assigned a specific FAS, such as CC, etc. It is the responsibility of each communicator to have on hand the above publications as reference when using FAS.

21. Command.

A. This plan supersedes all previous Operations and Training Plans or instructions issued by California Wing, CAP prior to this date.

B. All units will advise this Headquarters, Attn: DC, of any factors that may limit or prevent execution of this plan as written.

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